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THE FACTORS OF MARKETING CHANNEL SELECTION OF QUEEN PINEAPPLE FARMERS IN CAMARINES NORTE

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Maria Christina F. Campita[1], Hiromi Tokuda[2], Hector M. Sales[3]
[1]Nagoya University, Asian Satellite Campus Institute (ASCI), Laguna, Philippines.
christina.campita@gmail.com , ORCID: 0000-0002-5678-8752
[2]Nagoya University, Nagoya, Japan.
tokuda@agr.nagoya-u.ac.jp , ORCID: 0000-0002-5436-1683
[3]Ateneo de Naga University, Naga City, Camarines Sur, Philippines.
hecsam74@gmail.com, ORCID: 0000-0002-9386-2544

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ABSTRACT

Purpose - Pineapple cultivation provides sustainable livelihood to many smallholder farmers in developing countries like the Philippines. However, income is affected by the selection of marketing channels. This article assessed the factors affecting the selection of marketing channels of Queen Pineapple farmers in Camarines Norte.

Methodology - A mixed data collection process was used, including semi-structured questionnaires and key informant interviews. Primary data gathered from 96 randomly sampled farmers and 32 purposively sampled buyers were used to characterize the nature of the channels. Profitability was measured by calculating the marketing costs, net profit, and profit margin per channel. The Chi-square statistics were used to test the influence of socio-economic variables on the marketing channels, while descriptive statistics were used to interpret the factors affecting the selection of marketing channels.

Findings - Among the five identified channels, respondents preferred the wholesaler channel despite low profitability. Quick cash was identified as the major factor in the selection of marketing channels. A significant relationship relative to marketing channels was traced to the interplay of the following key factors: gender, civil status, location, and sources of income. Profitability analysis dictates that the optimum channel for farmers is the direct channel, but requires higher capital for added marketing costs. Income analysis showed that the majority of the farmer respondents were living below the poverty threshold.

Conclusion – Financial pressures hinder most pineapple farmers from choosing the most profitable channel. It is hereby recommended to sell via direct channel by batch through synchronized harvesting; adopt a multi-crop pineapple production system to maximize land utilization; secure off-farm employment for an added source of capital and income; explore a joint marketing system to sell in bulk inside and outside the province; seek logistical and technical assistance from the LGUs, cooperatives, and DA to strengthen market linkage; and adopt the value chain concept to add value to the product.

Keywords: Profitability analysis, income classification, type of marketing channels, poverty threshold
JEL Codes: L10, O13, P42

1. INTRODUCTION

The Philippines is considered one of the leading exporters of pineapple globally (Reinhardt, 2009; Balito, 2011; Hossain, 2016) which makes the pineapple industry one of the most significant contributors to the country's Gross Domestic Product (GDP). The pineapple industry shared 7.2% of the Agriculture, Fishery, and Forestry (AFF) Sector (Statistica, 2022). AFF contributed one-fifth (20%) of the economy's aggregate domestic output (Habito & Briones, 2005), translated to the livelihood of around 60% of the Philippine population living in the rural areas (Laure, 2003), including smallholder pineapple farmers.

Pineapple, a perennial herb in the botanical family *Bromeliaceae* (Bartholomew et al., 2002; Tewodros et al., 2018) and a globally popular fruit, is one of the top export commodities in the Philippines (PSA, 2019). It has four common pineapple varieties which thrive in the country namely: a) Hawaiian, b) MD2, both produced heavily in Mindanao by giant companies such as DOLE and Del Monte mainly for export, c) the Red Spanish variety popularly grown in the province of Aklan for fiber production, and d) the Queen Pineapple in South Luzon primarily produced for domestic demand.

Queen Pineapple production is concentrated in the province of Camarines Norte due to land and climate suitability. Recent records estimate that said variety is cultivated on around 4,070 hectares in the province which comprises 88% of the total pineapple production area in the Bicol region (PSA, 2020). Production of this variety is of backyard type with an average yield per hectare of 25,650 pcs or 20.5 MT. Of this estimated production yield, around 95% of the harvest is sold as fresh fruits. Pineapple, being a perishable good can last for only two weeks after harvesting, hence, should be marketed in its prime condition or be subjected to processing to extend its shelf life.

Specifically, the Queen Pineapple which comprised 5.3% of the total national production (PSA, 2020), is generally smaller in size ranging from 0.7 to 1 kg in medium to large classification (PNS, 2004) but sweetest at 14-degree Brix. The said pineapple variety is widely characterized by a tapering shape, deep eyes, and fresh yellow color and is known for its characteristic aroma, crisp flesh, and sweet juice. In addition, it has strong fiber which is excellent for cloth material and an alternative for animal leather.

In reality, the marketing of pineapple is laborious, entails high capital requirements, and needs adequate information. These factors put some tolls on farmers' decisions on which marketing channel to take. Furthermore, the lack of market information, poor negotiating skills, limited resources, loyalty (Galvez 2019), perishability of products and yield (Segei et al. 2014), higher price (Kaido, 2020), transportation cost, and time (Apandi et al., 2017), are added constraints that beset the farmers from making sound marketing decisions. The bottom line is for the farmer to decide on the best marketing channel which will reduce losses or costs, thus, maximizing profit or increasing income (Apandi et al., 2017).

Most pineapple products and by-products are delivered in Metro Manila, where demand is high, and consumers have higher purchasing power. However, prime market outlets in high-demand areas are dominated by varieties such as Hawaiian and MD2 produced by large corporations such as DOLE and Del Monte. In addition, traders (i.e., wholesalers and retailers) who are well funded dominate the market for the pineapple to the detriment of resource-poor farmers who have very limited capital to operate and market their produce.

This current market condition resulted in low profitability and left farmers struggling to bail themselves out of poverty. Many smallholder farmers live in small houses and survive by doing multiple jobs such as labor to neighboring farms, tricycle driver, or construction worker, among others. In contrast, intermediaries such as wholesalers and retailers who corner the bulk of income from production and marketing have visible socio-economic transformations, i.e., huge houses, vehicles, and a larger budget for food, education, and entertainment.

Most articles related to this subject attributed the low productivity of farmers to the poor quality of the product (Bime et al., 2014; Mina et al., 2021). Low productivity could also be traced to the low participation rate of farmers in the marketing of their goods, unlike wholesalers and cooperatives, who devote more time to marketing activities (Galvez 2019). However, according to Panda (2012), marketing of pineapple depends on the appropriate selection of marketing channels or the choice of non-traditional channels (Naseer et al., 2019).

This paper analyzed the characteristics of existing market channels and channel intermediaries in the pineapple market in Camarines Norte to validate some findings that this factor has a more significant attribution to the productivity of pineapple farmers. The value chain segment of each channel was likewise analyzed as well as the profit shares among farmers and intermediaries. The marketing practices of pineapple farmers particularly on the logic behind their marketing decisions and how will this contribute ultimately to the improvement of their quality of life were further explored and assessed.

2. REVIEW OF LITERATURE

In the marketing of agricultural products, profitability depends on the selection of marketing channels according to Panda (2012). Essentially, a sound channel selection decision is based on sufficient marketing information, strong negotiation skills, and a more comprehensive network. Several studies were conducted along this line to understand profitability in different channels (Gessesse et al., 2019; Wijesooriya, V.R. et al., 2020; and Kaido, 2020) and the factors affecting the selection of channels (Sigei et al. (2014) Apandi et al. 2017, Galvez, 2019; Nahar et al. 2020). However, no specific study on the profitability and the factors affecting the selection of marketing channels for the Queen pineapple variety was ever been conducted.

There are ten pineapple farmers' associations and four cooperatives actively involved in enhancing the pineapple industry in Camarines Norte (Office of the Provincial Agriculturist). The industry is known for its high potential (Balite, 2011), mainly as table fruit. Value creation and product development are still at a fledgling stage initiated by the cooperative. At present, majority of the farmers are focused on the production and have limited market participation.

There are several studies about pineapple marketing channels. Some of them analyzed the profit margins of farmers and intermediaries. A study in Southern Ethiopia indicated the participation of primary and secondary actors in the production and marketing of pineapple. Findings from these studies showed that the highest profit margin was cornered by processors at 33.43%, retailers at 26.96%, wholesalers at 18.33%, and assemblers at 11.86%. The producer had the lowest share of profit margin among the actors at 9.41% (Gessesse et al., 2019).

In Sri Lanka, the highest profit margin went to the retailer at 14-20%, the farmer at 9-13%, and collectors at 5-7%. The lowest share of profit margin went to the wholesaler at 4-8% (Wijesooriya, V.R. et al., 2021). However, a study in Jambi Province Indonesia (Kaido, 2020) indicated that farmers had the highest profit margin among actors at 36.25%, followed by middlemen – 26%, wholesalers – 17.82%, local home industry at around 11%, while the lowest share was cornered by the local trader at 8.93%. In the previous studies conducted, the profit share among concerned sectors was vastly different. This was due to differences in marketing channels and market competitiveness among concerned sectors.

The factors affecting farmers' selection of marketing channels were also analyzed in previous studies. In Isabela, Philippines, there were six (6) marketing channels and four (4) intermediaries, namely: canvassers, traders, processors, and retailers. The factors identified in choosing a marketing channel were based chiefly on loyalty (usual buyers), quality (in terms of size and product handling), and price (based on volume and win-win terms). Galvez (2019) concluded that most of the farmers in Isabela were not keen on prioritizing the marketing activities of their produce.

There were seven marketing channels identified in Sarawak Malaysia, but farmers were inclined to use limited channels due to a lack of awareness. Several factors affecting the choice of channels were identified in Malaysia, these included: 1) price, quantity, and quality of the product; 2) distance between the farm and market center, and 3) service rendered by buyers. Apandi et al. (2017) believed that appropriate marketing channels reduce losses and increase income; hence, marketing information on the availability of marketing channels was crucial. A more recent study by Nahar et al. (2020) in the same area showed five factors affecting farmers' choice of marketing channels, similar to the findings of Apandi et al., with the addition of product perishability.

In Jambi Province, Indonesia, there were only three (3) marketing channels. Farmers sold large quantities of pineapple directly to the wholesaler while the other two channels passed through the intermediaries. Factors affecting the choice of channels based on channel description were a) grading, b) marketing arrangement, and c) the urgent need for money (Kaido, 2020).

In West Bengal, India, there were six (6) marketing channels. Two (2) had the complete chain mechanism. Only one channel is attached contractually with the private processing unit, for which information seems to be limited for analysis; the sector has a high capacity to provide rural employment. The factor affecting the choice of marketing channel was not discussed.

In Kericho County, Kenya, the number of channels was not identified. However, Sigei et al. (2014) identified six factors affecting the choice of marketing channels of smallholder pineapple farmers, namely a) gender, b) group marketing, c) price information, d) pineapple yield, e) contract marketing, and f) vehicle ownership. The findings suggested that males as heads of the household are more risk-taker and market-oriented than the female head of the households.

Most of the previous studies indicated several marketing channels and various factors affecting farmers' selection of the channels in the study areas wherein the dominant factors zeroed in on issues related to market information and the quality of products.

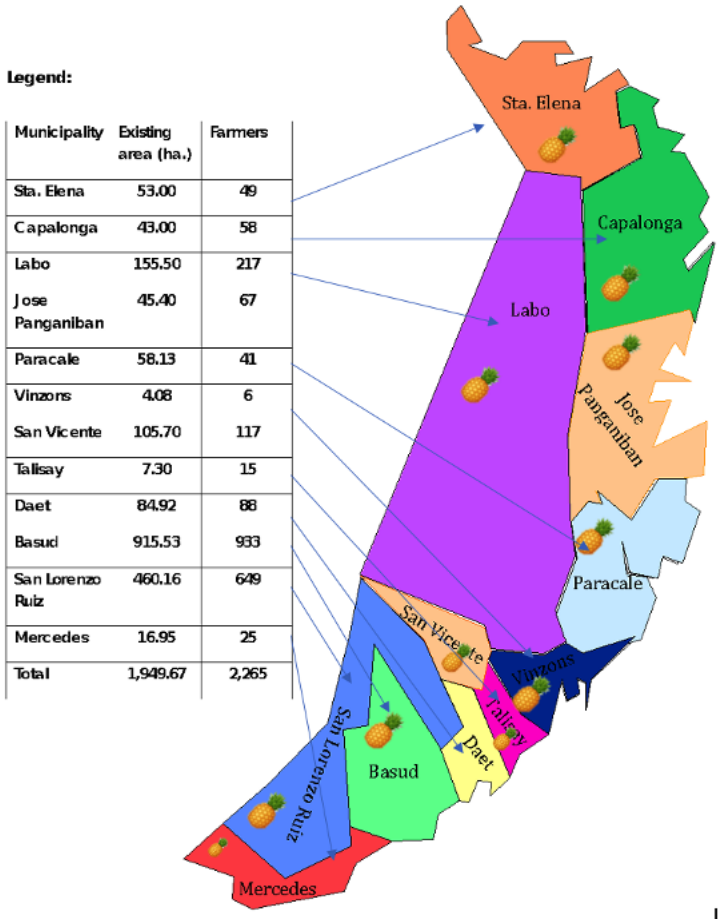
3. METHODOLOGY

The study was purposively conducted in Camarines Norte, where 96% of the total Queen Pineapple production in the country is being produced (PSA 2020). Camarines Norte is located in the Bicol Region in Luzon. Pineapple farmers are scattered in its 12 municipalities with a higher concentration in the first district or southern portion. A total of 96 respondents out of 2,265 farmers were randomly selected for the farmer's survey based on the number of pineapple farmers per municipality.

Primary data were obtained through a survey using semi-structured questionnaires and key informant interviews. Due to the pandemic, the survey was conducted using face-to-face interviews through enumerators for 86 respondents (90%) and telephone interviews for ten respondents (10%) from January-May 2021. For intermediaries, 32 respondents composed of an agent, wholesaler, retailer, and processor were purposively selected. Secondary data were gathered from Local Government Unit offices, the Department of Agriculture, and refereed journals. Chi-square Statistics and cross-tabulation analysis were done using IBM SPSS v 25 to determine the association of socioeconomic variables to marketing channels. Descriptive statistic was used to interpret the factors that influence the selection of marketing channels. Profitability analysis was estimated using marketing costs, net profit, and profit margin. Income was classified according to sources (on-farm and off-farm) and analyzed based on the concept of International Poverty Threshold and Purchasing Power Parity.

In the farmers' survey, more than half of the respondents were male (65%), aged 41-60 (64.5%), with a mean age of 48. This figure is slightly lower than the average age of a total number of farmers at 51, which indicates higher participation of middle age farmers than younger and old-age farmers in pineapple cultivation. Most of the respondents were married (83%) with an average household size of 5 and reached high school level (47.9%). The respondents had an average total farm size of 3.3 hectares and an average of 1.6 hectares allocated to pineapple growing. Almost half of the respondents (41%) owned the land; the rests were tenants or leaseholders. The majority of the farmers intercrop pineapple with coconut while growing other crops and animals, and more than half had off-farm employment (60%) as an additional source of income. For off-farm employment, the farmer respondents perform other jobs such as farm laborer to other farms, Barangay Official, construction worker, and driver, among others. Out of 96, 18 respondents solely depend on income from pineapple.

Figure 1: Existing Area Planted with Queen Pineapple and Number of Farmers per Municipality



Source: A Compendium of Queen Pineapple Industry and Technology Milestones, Campita 2021.

Only 32% of the farmer respondents were members of the cooperative. Cooperative mainly processed and supported members by buying small-size pineapples, which other buyers would otherwise reject. Also, cooperatives provide credit support, marketing linkage, and free training. Most non-members were unaware of the benefits of the cooperative hence the low percentage of membership.

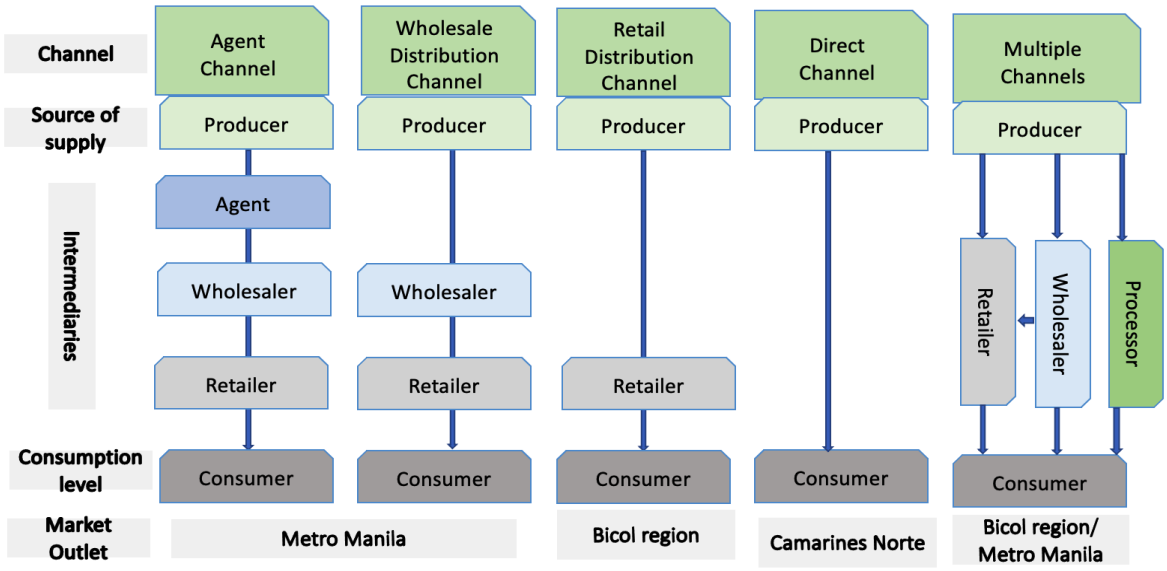
A total of 32 respondents were purposively selected for the intermediaries' survey, comprised of 16 traders, seven retailers, four agents, four members of cooperatives, and one individual processor. Female respondents included the majority (72%), aged 41-60 (75%), and an average household of 5 members. Most of the respondents were married (72%) and reached high school (41%) and college levels (34%). The majority were operating with a capital of Php 500,000.00 and below (72%), only one had a capital of 1 million, and two had more than two million. The rest preferred not to disclose information on capital.

4. RESULTS AND DISCUSSION

4.1. The Nature and Characteristics of the Marketing Channels

There were five existing marketing channels used to sell pineapple, namely agent, wholesaler, retailer, multiple and direct. As shown in Figure 2, the most extended channel is the agent, and the most straightforward channel is direct. There were four intermediaries: agent, wholesaler, retailer, and processor. The product sold to processors was small-sized pineapples. Accordingly, the farmers who sell to processors also used other channels for the medium and large sizes of pineapples. This channel is called multiple channels.

Figure 2: Marketing Channels of Queen Pineapple in Camarines Norte



Source: The farmer's survey by the author (2021)

4.1.1. Type of Channels

Farmer-Agent-Wholesaler-Retailer-Consumer

This three-level channel is the longest in Queen pineapple marketing and was chosen by 17 or 18% of the respondents (Figure 2). Farmers agreed on the price with the agent and got paid as early as two weeks before harvesting. Agents charged Php .5 to 1 per fruit or 5% of the gross sales per successful transaction.

The agents do not buy or sell pineapple by themselves. The wholesalers commission them. The wholesalers facilitate postharvest and marketing activities. Similar to the wholesaler channel, wholesalers supervise the harvesting, grading, uploading, and transporting of pineapples. Most pineapples were transported to Metro Manila by the wholesalers in this channel. Some wholesalers have their market outlet in Metro Manila and sell directly to consumers, while others sell pineapple to retailers. The retailers sell pineapples to the consumer.

There are at least 16 pineapple agents in Camarines Norte mostly based in Basud; some agents are also farmers. Although Agents have coverage areas that can span from one municipality to the entire province, 16 out of 17 farmers who chose the agent channel were residing within or nearby municipality, hence living nearby the agents. An agent has an average client of 10 farmers. The agent visits actual farm plantations and discusses marketing schemes and pricing with the farmers. If an agreement is not immediately made, the agent leaves contact numbers to farmers in case the farmers decide to sell.

The advantages of this channel from the farmers' viewpoint are a standing relationship with the agent and convenience. Filipino farmers are shy and overly grateful which prevents them from doing marketing negotiations with people they do not know and trust. Since agents were visible at the farm level, farmers develop a habit of selling harvest to them rather than exploring other marketing channels. Farmers also believed that this setup is very convenient since they need not go out of the farm to scout for buyers, the agents go to them. The disadvantage is that farmers cannot negotiate further to increase an agreed price in case the farmers see that the previously agreed price is not sufficient.

Farmer-Wholesaler-Retailer-Consumer

This two-level channel is where the wholesalers buy the pineapple harvest in large volumes. In this channel, postharvest activities such as harvesting, grading/sizing, packaging, and transportation are done by the wholesaler. Most respondents, 57 out of 96, preferred this channel due to its convenience and fast transaction. Most farmers devote time to planting up to harvesting but are less interested in marketing activities. Farmers prefer channels with less market participation and activities such as but not limited to planning the marketing scheme, identifying who and where to sell, setting the price, negotiating, and or directly selling the harvest.

Wholesalers of pineapple in Camarines Norte are locally called traders. There were seven registered wholesalers/traders based within the province, which operate with a total capital of 1.1 million. Registered wholesalers are wholesalers with legitimate business names and area coverage issued by the Department of Trade and Industry (lifetime) and with the business permit issued by the municipal mayor (renewable per year). Registered wholesalers can be provided with a foodlane pass/sticker upon request. Foodlane accreditation is given to *viajeros* to ensure smooth delivery of products, especially

during the pandemic where border restrictions were implemented (Department of Agriculture, 2020) and in normal conditions where traffic flow is heavy.

Each trader has a contact of 2-3 agents. Traders transact with agents or directly with farmers. Farmers can borrow money from traders as early as the planting season; hence an informal marketing agreement was made that the farmer would sell to its creditor. Similar to the agent channel, most of the pineapple in the wholesaler channel is transported to Metro Manila.

Compared to the agent channel, the advantage of this channel is that farmers can further negotiate the price which may otherwise be paid for the agent's fee. Hauling from the farm to the road is usually shouldered by the farmers. However, in this channel, farmers may negotiate to split the cost of the hauling fee or increase the price of the harvest. However, to directly sell to the trader, farmers must go to the trader's house and request for farm visit before negotiation.

Farmer-Retailer-Consumer

This one-level channel is where the farmers sell fresh pineapple to retailers. Only 3 or 3% of the respondents chose this channel due to its limited absorptive capacity. A single retailer can only accept up to 4 metric tons per transaction. Hence, farmers would have to look for several retailers or use a combination of channels to market the excess volume. The retailer group is composed of market and street vendors. The retailers operating within the Bicol Region sell at a lower price than the retailers in Metro Manila. Local retailers with market outlets sourced out supply from farmers who are relatives, neighbors, or those whom a trusted person recommended. Street vendors often sourced out supply from commercial farmers with 1-hectare plantation and above who sell rejects and portions of their good size harvest.

Farmer – Consumer

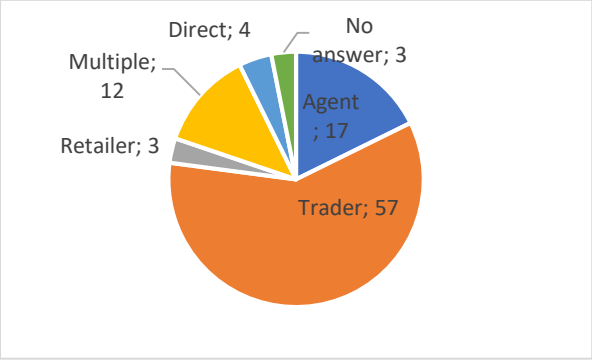
Direct marketing to consumers is the simplest channel. This was chosen by 4 or 4% of the respondents. Without intermediaries, farmers facilitate the postharvest and marketing activities and incur corresponding marketing and wastage costs. Farmers sell pineapple by using a hauler (tricycle) to go house to house within the nearby barangays and municipalities. A farmer can sell an average of 600 pcs sold at Php 15.00-20.00. Thus a farmer earns a round Php 10,000.00 and spent Php 500 on gasoline and Php 500 on food. Farmer also sells pineapple directly to the consumer by renting stalls in the market at Php 300.00 per day. Depending on the demand, pineapples sold at market stall ranges from 500 to 1000 pcs per day at Php 15.00 -20.00 per piece. However, depending on the ripeness of pineapple and the quality of the road, wastage may range from 30 to 50 pieces a day. Other than the capital, the perishability of Queen pineapple hinders the farmer from choosing this simplest channel despite higher potential income. Hence, one strategy is scheduled application of growth regulator to be able to sell pineapple by batch.

Multiple channels

In multi-channel, the farmer decides to sell pineapple through various channels. Some farmers divide their harvest to retailers and processors and/or directly sell it to consumers. Of the twelve respondents who chose this channel the following combination was reflected in the data: a) Sell half of the produce to the trader and half directly to consumers b) sell to the agent and sell half of the harvest directly to traders, c) Sell half to the retailers and the other half of the product directly to consumers, d) sell one third to retailers, one third to cooperative and one third directly to consumers, and e) sell to agent and retailer or sell to trader and half to the retailer. Selling to multiple channels was preferred by 12 or 13 % of the respondents.

Selling harvest for processing to cooperatives also appeals to backyard producers, with limited capital; backyard producers have a limited number of plants and budget for fertilizer and weed control, resulting in a high number of small fruits suited for processing. Further, processors cannot buy in large volumes as they limit the number of fruits to process each day; hence the absorptive capacity of the cooperative is also limited, like the retailer channel.

Figure 3: Number of Respondents by Marketing Channel



Source: The farmer's survey by the author (2021)

4.1.2. Type of Intermediaries

Channel intermediaries are among the most critical elements of any supply chain, as the bulk of output passes through them (Sharma, et al., 2020). In the Queen pineapple marketing channel, there are up to three layers of intermediaries. The first layer is the intermediaries who purchase pineapple from farmers, the second layer is the wholesalers who transact through agents, and the third layer is the retailers who purchase from the wholesaler. These retailers who purchase products from the wholesalers are mostly based in Metro Manila. Table 1 shows the absorptive capacity of the first layer of channel intermediaries who purchase directly from farmers.

Table 1. Characteristics and Absorptive Capacity of Intermediaries in The Marketing Channels of Queen Pineapple

Intermediaries	Nature of Business	Purchasing Area	Qty. per Transaction (pcs)	Volume Traded per Month (MT)	Destination	Form of Commodity
Agent	Not registered	Farm Site	25,000	up to 160	Metro Manila	Fresh
Wholesaler	Registered or					
	Not Registered	Farm Site	20,000	up to 20	Bicol Region	Fresh
Retailer	Not Registered	Farm site/ Market Outlet	15,000	up to 4	Camarines Norte	Fresh
Processor	Registered	Consolidating /Processing Area	3000-25,000	1-160	MM/Bicol/CN	Processed and Fresh

Source: The buyers' survey by the author (2021)

The wholesalers have the largest absorptive capacity of up to one truckload per transaction. Wholesalers are concentrated in the municipality of Basud, where a large plantation of Queen pineapple is located. They offer cash advances to farmers during the production period from planting to fruiting, harvest the fruits through hired laborers, and haul the harvest from access road near the farm to the market.

Retailers are usually not registered, they are mostly street vendors and market vendors. Travelers in Camarines Norte during peak season were greeted by vendors along the highway selling their pineapples arranged in nipa hut or "Bahay Kubo". Retailers distribute pineapple within the Bicol region due to limited logistics and absorptive capacity.

Processors in this paper refer to registered cooperatives processing pineapple on a commercial scale within the province. The strategy of the cooperative is to process smaller fruits into juice and other by-products to help smallholder farmers. However, the cooperative also has a limited absorptive capacity and can only buy up to 5,000 for processing and up to 25,000 for fresh products using a pre-arrangement agreement or contract. As needed, the cooperative assists members in selling their produce; at some point, cooperatives also act as wholesalers or retailers.

Table 2: Distribution of Harvest per Channel

Intermediaries	No. of respondents	Total Harvest for one cycle (pcs)	Percentage (%)
Agent	17	317,650	20
Wholesaler	57	1,043,843	67
Retailer	3	62,120	4
Direct	4	81,050	5
Multiple	12	63,580	4

Source: The farmers' survey by the author (2021)

Intermediaries play a crucial role in Queen pineapple marketing, with 95% (Table 2) of the products passing through them before reaching consumers. Except for direct, where the farmer sells directly to consumers, all channels were indirect, where farmers sell to intermediaries. Since traders only commissioned agents, the absorptive capacity is the same as that of wholesalers.

4.2. Profitability Analysis

The activities, estimated price, cost, and profit of farmers and intermediaries are shown in Table 3. In the agent channel, the average farm-gate price of pineapple is 5.52 Philippine pesos (Php) per piece. The farmer spent Php 3.73 per piece from planting to harvesting and earns Php 1.78. In this channel, farmers have no postharvest and marketing participation. The farmer negotiates with the trader, who gets at least 5% of the total gross sales per transaction. Therefore, the profit of the agent is Php 0.27 per piece. The agents' fee is added to the cost incurred by wholesalers and does not affect the farm gate price.

The wholesaler purchases Php 5.52 from farmers and sells Php 10.60 to retailers. They pay Php 0.27 to agents. The wholesalers hired laborers to harvest, haul, grade, sort, load and unload and transport the product to the market outlet, usually in Metro Manila. They spend Php 2.32 on these activities. Therefore, their profit is Php 2.49. The retailers usually rent market stalls and pay for hauling, sorting, and vending labor. They purchase at Php 10.60 from wholesalers and spend Php 2.83 on their activities. They sell at 22.10 to consumers. Therefore, the retailers' profit is Php 8.67.

Hence in the agent channel, the total cost for production and marketing is Php 8.89, and the profit is Php 13.21. The profit among farmers and intermediaries is 13.5% for farmers, 2.0% for agents, 18.8% for wholesalers, and 65.6% for retailers. The highest profit goes to retailers similar to the findings of Wijesooriya, V.R. et al.(2020), on profitability analysis of farmers in Sri Lanka and contrary to the study of Kaido (2020) that farmers in Jambi province Indonesia get the highest profit share among the actors. Farmers have no postharvest and market participation while the wholesalers perform the heavy activities in the channel. The agents merely negotiate and earn the lowest per transaction.

The wholesaler channel is almost the same as the agent channel. The agent's profit is added to the wholesalers as the agents are removed from the channel. The wholesalers directly transact with farmers and reduce the cost of the agents' fee. As a result, had an increased profit of Php 0.27 per piece compared to the agent channel. Retailers' cost, profit, and product prices in the wholesale channel are the same as that of the agent channel. This is the most profitable channel for the wholesalers. The wholesalers profit by economies of scale, purchasing and delivering huge volumes to metro manila, and backloading vegetables to the province.

In the retailer channel, the farmer incurred additional costs on postharvest and marketing activities but earned an additional income of Php 0.9 per piece compared to agent and wholesaler channels because of the higher purchase price. The retailers purchase at a higher price Php 7.64, but the selling price to the consumer is lower than the agent and wholesaler channel. In this channel, retailers are mainly based within the province of Camarines Norte and sometimes sell in the nearby provinces of Camarines Sur, Albay, and Sorsogon. The retail price in the province is lower than that in Metro Manila.

Also, retailers spend more than the agent and wholesaler because of additional activities. Therefore, the profit of retailers in the retailer channel is Php 5.15, which is lower than the profit of retailers in the agent and wholesaler channel. In this channel, the total cost for production and marketing is Php 8.08, and the profit is Php 7.83. The proportion of profit between farmers and retailers is 34.2% and 65.8%, respectively. Though the retailers get the highest profit share, this is the point where pineapples are rapidly decaying. Hence the risk of losses once the pineapples are not sold immediately was high.

In the direct channel, as there is no intermediary in this channel, the farmer performs all the activities from planting to harvesting, grading, loading, and transporting the products to the market outlet and directly selling to consumers. In this channel, the cost spent by the farmer is the highest because the farmer has to bear all the costs. The farmers' cost is doubled compared to the agent and wholesaler channel at Php 3.08 per piece and around Php 1.85 per piece increase compared to the retailer channel. The retail price is also the lowest, but farmers earn the highest profit at Php 8.61 per piece because the farmer gets all the profit.

In multiple channels, farmers may opt to use a combination of any of the four channels mentioned, and incurred cost and earned profit depend on the specific combination. To engage in this channel, farmers need sufficient market information and a network of contacts to sell pineapple using different channels.

The direct channel brings the largest profit to the farmer. However, the farmer conducts more activities than the other channel. The direct channel had the lowest cost and gained all of its profit because of the absence of intermediaries. However, it should be noted that there is a limit to the quantity that can be sold in the province. As mentioned above, a large part of the pineapple is sold in Metro Manila. Even though the local markets are more profitable for the farmer than Metro Manila, the primary market is still Metro Manila.

The most affordable retail price was at the direct channel at the consumer level. This was expected because of the reduced marketing layers, the farmers can earn more, and the consumer can buy a pineapple at fair value. The direct channel is where the farmer and the consumer benefit the most.

Table 3: Activities, Estimated Price, Cost, and Profit of Farmer and Intermediaries per Channel

Channel	Particulars	Farmer (Php/pc)	Agent (Php/pc)	Wholesaler (Php/pc)	Retailer (Php/pc)
AGENT CHANNEL	**Price**	5.52	5.79	10.60	22.10
	Cost	3.73	5.52	8.11	13.43
	Profit	1.78	0.27	2.49	8.67
	Activities	Planting to Fruiting, Hauling from farm to access road	Negotiation	Harvesting, Grading, Up/Unloading, Transporting	Sorting, Selling to Consumer
	Price	5.52		10.60	22.10

WHOLESALER CHANNEL	**Cost**	3.73	7.81	13.43
	Profit	1.78	2.79	8.67
	Activities	Planting to Fruiting, Hauling from farm to access road	Negotiation/ Harvesting, Grading, Up/Unloading, Transporting	Sorting, Selling to the Consumer
RETAILER CHANNEL	**Price**	7.64		15.91
	Cost	4.96		10.76
	Profit	2.68		5.15
	Activities	Planting, Harvesting, Grading, Up/Unloading, Transporting		Sorting, Transporting to market outlets, Selling to the Consumer
DIRECT CHANNEL	**Price**	15.42		
	Cost	6.81		
	Profit	8.61		
	Activities	Planting, harvesting, Grading, Up/Unloading Transportation, and selling to the consumer		
MULTIPLE CHANNEL	combination of any channels above			

Note: * Source: The farmers' and buyers' survey by the author (2021)

The result showed that income from the direct channel is 384% higher compared to the agent and wholesaler and around 221% higher compared to the retailer channel. It is evident that the highest profit for farmers comes from direct channel however, only four respondents are capable of doing direct selling. Since the capital requirement is way above most farmers' financial capacity, farmers must be empowered to participate in marketing activities through the direct channel. To do this, farmers must have sufficient capital of Php 200,000.00 to produce and self-market around 30,000 pcs of pineapples. There must be available loan windows that farmers can access not from traders but from banks or cooperatives.

Further, the result showed that the channel varies mainly on cost requirements and the activities involved in each level. However, both cost requirements and activities involve money. Hence the bottom line of the farmer's decision relies on the capacity to finance the whole process from planting, harvesting, postharvest, and marketing. More so, sufficient marketing information is needed to empower them to perform these activities as to cost and prices per channel, network and negotiation skills, and building long-term relations with their clients.

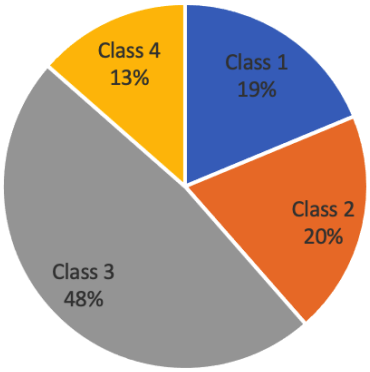
4.3. Socio-economic Characteristics of the Respondents Relative to Marketing Channels

To understand the economic situation of pineapple growers in Camarines Norte relative to the selection of marketing channels, sources of income were classified and analyzed based on the concept of the poverty threshold and purchasing power parity. Factors affecting the selection of marketing channels were also interpreted to understand why they choose specific channels.

4.3.1. Income Classification of Farmer Respondents per Channel

There were four classifications of pineapple farmers' income sources: Class 1- pineapple (mono-cropping) without off-farm employment, Class 2-Pineapple with other crops and animals without off-farm employment, Class 3 - Pineapple (monocropping) and off-farm employment, and Class 4-Pineapple with other crops and animals and off-farm employment. Only 19% of the respondents relied on income from pineapple only. Some had grown other crops (20%), while some performed off-farm employment to augment income from pineapple monocropping (13%). Meanwhile, most of the respondents (48%) had a combined income from a pineapple while raising other crops and animals and performing off-farm employment.

Figure 4: Percentage of Respondents by Income Class



Source: The farmer's survey by the author (2021)

As shown in Table 4 below, the respondents' average actual income (combination of on and off-farm income) was Php 91,808.29 or Php 7,650.00 per month. Among the channels, the highest actual income was found in multiple channels and the lowest actual income was found in the retailer channel.

Hence, farmers in a specific class must choose the channel which reflected the highest income. It can be noted that if farmers mono-crop pineapple without off-farm employment, it is better to sell pineapple through retailers or directly sell to consumers, or a combination of both. If a farmer grows pineapple with other crops, it is best to sell pineapple directly to the consumer along with harvest from other crops to maximize income. However, if a farmer is a mono-cropping pineapple and at the same time has off-farm employment, the best channel is the wholesaler channel. This would save his time and labor which would otherwise be spent on his off-farm employment. Meanwhile, if a farmer has multiple crops and off-farm employment, he could earn more by using a combination of channels.

Table 4: Average Annual Income vs Average Required Income of Farmer Respondents by Income Classification per Channel

Income class	Marketing Channel					Average Actual Income (Php)	Average Required Income (Php)	Income difference (Php)
	Agent	Wholesaler	Retailer	Multiple	Direct			
Class 1		45,689.67	70,445.00	85,000.00	62,605.00	50,186.61	58,600.75	-8,412.14
Class 2	31,757.50	58,000.83	41,285.25	44,110.88	71,812.00	52,008.45	61,210.50	-9,202.05
Class 3	30,536.33	114,352.50		42,562.50	69,300.00	66,680.23	49,932.00	16,648.33
Class 4	102,594.44	135,013.48		180,978.25		131,634.72	60,854.63	70,780.09
Total	**68,828.41**	**97,534.96**	**51,005.17**	**115,822.96**	**68,882.25**	**91,808.29**	**59,023.35**	**32,784.93**

Source: The farmer's survey by author (2021)

To assess the economic situation of the farmer respondents per class and channel, the actual income was compared to the required income based on the International Poverty Line (IPL) currently at $1.90 a day (Kenton, 2020). IPL is the threshold that someone is living in poverty. Compared to the Purchasing Power Parity (PPP) Threshold of 19.5 LCU per 1$ per adult per day, a family of five requires Php 5,634.69 per month or **67,616.25** per year. Based on this data, farmer respondents under Classes 1 and 2 are living below the IPL, while farmer respondents with off-farm employment under classes 3 and 4 have better economic conditions.

To further assess the association of income and other socio-economic factors of the respondents, the chi-square statistics were employed to determine if the observed connection in cross-tabulation was statistically significant. Results showed that marketing channel has a significant association with gender, civil status, location, and source of income.

Table 5: Association of Marketing Channels to Socio-Economic Factors of the Respondents

Variable	Pearson Chi-Square	df	Asymptomatic Significance
Gender	9.449	5	.092*
Civil Status	35.749	20	.016*
Educational Level	20.228	25	.735
Cooperative Membership	21.446	15	.123

Years in Farming	37.284	25	.054
Land Area	25.991	25	.408
Land Tenure Status	23.119	20	.283
Source of Information	15.780	30	.985
Location	69.267	35	.001*
Source of Income	28.012	15	.021*

*Significant at 5% level

Cross-tabulation results suggest that the majority of men (n=37) and the majority of married respondents (n=50) preferred the wholesaler channel. This may be an indication that men may want faster transactions than female respondents. Married respondents who preferred the wholesale channel may be more financially pressured than single, widowed, or annulled respondents.

Further, most of the respondents from San Lorenzo Ruiz and Basud (n=34) preferred the wholesaler channel while 16 out of 17 respondents who chose the agent channel are living in Basud. This may be an indication that these respondents are living in proximity to the agent and wholesalers. Also, most of the respondents whose source of income was from pineapple multi-cropping and with off-farm employment (n=28) believed that the wholesaler channel is the most favorable.

4.3.2. Factors Affecting Selection of Marketing Channel

Market channels are the series of pathways a product must go through and transform before it reaches the consumer. Choosing the right marketing channel is an important decision a farmer makes every harvest since it may reduce losses or increase income (Apandi, 2017). This decision is crucial and dictates the speed of transaction, the amount of money paid for the product, and the quality of the product upon reaching the consumers.

Table 6 summarizes the factors considered by the farmer in choosing a marketing channel. The farmer-respondents chose two factors on average. The predominant issue was quick cash, chosen by 60 out of 96 respondents (62.5%), and was selected 22.9% of the time. The second leading issue was time-saving (40.6%). High income ranked third among the issues (38.5%). Borrow capital was the least selected issue for choosing a marketing channel (2.1%) and was chosen two times out of 261. The quick cash being the top consideration is highly expected considering that pineapple farmers waited a long time to produce pineapple and had accumulated financial responsibilities at the end of the production period.

Table 6: Factors that Influence the Selection of Marketing Channels

Income Classification	Marketing Channel					
	Agent	Wholesaler	Retailer	Multiple	Direct	Total
Quick Cash	4	45	1	7	1	58
Time Saving	4	26	1	5	1	37
Less Labor Cost	7	23	2	2	1	35
High Income	8	20	1	4	2	35
Habit	13	4	2	4	-	23
Efficiency	7	8	1	3	-	19
Security	-	12	-	4		16
Recommendation of Trusted Person	6	7	-	2	-	15
Stability	3	1	1	2	1	8
Other reasons	2	1	-	-	1	3
borrow capital	-	1	-	-	1	2
No answer					1	1
Total	**17**	**57**	**3**	**12**	**4**	***93**

Source: The farmers' survey by the author (2021)
*Three (3) respondents have not indicated the market channel preference

The main factor influencing the selection of the Agent Channel is Habit (75% or 13 out of 17 respondents). Farmers using this channel have developed a trusting relationship with the agents and were not interested in exploring other channels. This is similar to the findings of Galvez (2019) that pineapple farmers in Isabela chose the channel because of loyalty. Further, farmers chose the agent channel because of perceived efficiency, lower labor costs, recommendation of a trusted person, and high income. However, profitability analysis (Table 3) showed that the agent channel has the lowest profitability at the farmer level. Hence, this indicates that farmers lack market information on comparative profitability data per channel similar to the findings of Kaido (2020).

The main factor influencing the selection of the Wholesaler Channel is Quick cash (79% or 45 out of 57 respondents). Quick cash was the main reason for 45 respondents who chose the wholesaler channel. The long production cycle depletes farmers' capital due to pineapple production's high labor and materials costs. The wholesaler channel was the fastest way to get cash since wholesalers have capital and can lend cash in advance or pay cash at an agreed time. Farmers prioritized Quick cash due to financial pressure to sustain production and personal needs. This was also the findings of previous studies that farmers preferred immediate payment (Blandon et al., 2009; Gelaw et al., 2016; Ochleng, 2020; and Schipamn and Qalm as cited by Ihli et al., 2021) despite available options with higher profitability (Fisher & Qalm, 2014). In this case, there were other marketing channels where profit margin would be higher, but due to financial pressure majority of the farmers chose the wholesaler channel.

The main factor influencing the selection of the Retailer channel are saving labor and habit (67% or 2 out of 3 respondents). Farmer respondents who chose this channel believed that selling to a trusted retailer can save labor costs compared to other channels. Selling out of habit indicates that the farmer and the retailer have a long-term relationship which proves convenient to the farmers. Since retailers have limited absorptive capacity, farmers who chose this channel has also limited production which is best suited to this channel.

The main factor influencing the selection of Multiple channels is quick cash (58% or 7 out of 12 respondents). Since this was a combination of channels, the farmer enjoyed the advantage of quick cash by selling to wholesalers or agents and high income by selling to the retailer or directly to the consumer. However, in choosing this channel a farmer needs additional capital, a wider network, and preferably a delivery vehicle.

The main factor influencing the selection of the Direct Channel is High Income (50% or 2 out of 4 respondents). Farmer respondents who chose this channel must have bigger capital and available logistics compared to other respondents. Since financial pressure is not a hindrance, farmers in this channel can independently decide on the methods of selling, grading, and pricing their produce.

Expectedly the main factor influencing the overall selection of channels is quick cash (60.4% or 58 out of 96 respondents). It can be deduced that respondents who chose this factor as the main consideration have experienced an urgent need to get back the capital they used in pineapple production to pay for other financial responsibilities. Financial pressure limits the respondents in choosing the most profitable channel.

The findings of this study revealed that pineapple farmers in Camarines Norte are similar to pineapple farmers in Isabela wherein most farmers could not sell their produce (Galvez, 2019), have an urgent need for money (Kaido, 2020) and prefer channels with limited marketing participation. To encourage participation in formal marketing of farmers in India, Panda (2012) recommended the enhancement of access to market information, training and education, value addition, and improved logistics.

5. CONCLUSION AND RECOMMENDATION

Around one-third of the pineapple farmers in Camarines Norte were living below the poverty threshold which means their income was not sufficient to finance the basic necessity. The long production period and high cost of pineapple cultivation result in strong financial pressure at the time of harvesting and marketing which hinders most of them from choosing an appropriate marketing channel.

Pineapple farmers have five marketing channels as options in marketing their products, however, the wholesaler channel was selected by a majority of the respondents due to quick cash, time-saving, and saving labor, despite lower profit compared to other channels. Among the intermediaries, the wholesaler has the most considerable capital and high absorptive volume capacity which enables them to capture the majority of the harvest delivered to market outlets outside the province. Retailers in Metro Manila get the highest profit share. Profitability analysis showed that farmers get the highest profit using direct channels however, the farmer gets to do more work and spend more than other channels and can only sell at a limited volume within the province.

A significant relationship relative to marketing channels was traced to the interplay of the following key factors: gender, civil status, location, and source of income. The majority of males, married status and with residence nearby an agent or wholesaler tend to choose the agent and wholesaler channels. Respondents with higher income were also located in the southern part of the province implying that economic opportunities are higher in the southern area.

Income analysis showed that to increase income, farmer respondents specifically under classes 1 and 2, may have to weigh between two options 1) expand production through enhanced multi-cropping and improving production management of pineapple to improve quality, or 2) get off-farm employment while growing pineapple and other crops. Respondents without off-farm employment have a greater challenge to increase their income by 25-30% to live above the poverty line. Profitability estimates provided evidence that choosing a direct channel can potentially bail them out of poverty.

This can be done by selling directly to the consumer by batch through synchronized harvesting. However, it entails selling at a limited volume and requires additional work and capital. To resolve this, farmers may strategize the application of growth

regulators to harvest and sell by batch to reduce marketing losses. Farmers may also adopt a multi-crop pineapple production system to maximize land utilization and increase productivity or secure off-farm employment.

Farmers may also initiate joint marketing by establishing a network of farmers who are willing to pull resources and consolidate harvest to sell within and outside the province. Further, farmers may also engage in active membership with the cooperative and seek the support of local government units (LGUs) and the Department of Agriculture to strengthen market linkage and sell a consolidated volume of pineapple in Metro Manila. Lastly, farmers may adopt the value chain concept, especially in the processing and marketing chain to add value to the product.

For further studies it is recommended to develop strategies to enhance access of pineapple farmers to market information to serve as a basis for the efficient selection of marketing channels; and assess the level of assistance provided by the LGU, DA, DTI and other concerned agencies in terms of farming sustainability; and identify sustainability mechanisms for the pineapple industry via policy imperatives.

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